Plants Recorded as Resistant to Root-Knot Nematodes (*Meloidogyne* spp.)

catalogued by

MARY T. FRANKLIN, Ph.D. and DAVID J. HOOPER

TECHNICAL COMMUNICATION No. 31 OF THE
COMMONWEALTH BUREAU OF HELMINTHOLOGY
ST. ALBANS, HERTS.

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INTRODUCTION

For many years it has been known that some plants are immune or resistant to attack by root-knot eelworms. Bessey (1911) and others have advocated the use of resistant plants in the rotation or as trap crops to effect a measure of control in root-knot infested land. A very full survey of the records of plants showing resistance to root-knot nematodes, then known collectively as *Heterodera marioni*, was given by Tyler in 1941. She noted that some plants were resistant to certain root-knot nematodes but susceptible to others. Christie & Albin (1944) partly explained this when they showed the existence of distinct races of root-knot nematodes with different host ranges. In 1949 Chitwood showed that at least five species or varieties of these nematodes could be distinguished and he placed them in the genus *Meloidogyne* Goeldi, 1887. In the last decade numerous workers have investigated the host ranges of *Meloidogyne* species and in 1954 Sasser devised a scheme by which some could be identified by their host reaction.

The purpose of this compilation is to bring together the published records of plants showing complete or partial resistance to identified *Meloidogyne* species.

In Section I the resistant plants are listed alphabetically, with the authorities for their scientific names as given in *Index Kewensis*, and the breeding line, strain or varietal name if stated, followed by the species of *Meloidogyne* to which they are resistant with the author and date of the record. To the best of our knowledge all authors who have recorded a plant as resistant to a species of *Meloidogyne* are listed. In Section II the plant species are arranged in their families and listed under each nematode to which they have been recorded as resistant. In this list species that have been recorded elsewhere as hosts (T. Goodey, 1956 and Goodey, Franklin & Hooper, 1959) are indicated by ‡. These inconsistent records may be due to differences in resistance shown by different varieties of cultivated plants, to differences in the criteria used by different workers for estimating resistance or to varying behaviour of different populations of a nematode species. Section III gives the literature from which the records have been taken.

The plants found in these lists are not necessarily representative of the whole plant kingdom. They are either crop plants in which resistance has been noticed by chance, plants that have been tested for resistance because they would be suitable rotation or cover crops in root-knot infested areas, weeds growing amongst infested crops or plants bred for root-knot resistance. Because of the haphazard way in which many of these plants have been selected for observation or testing, it would be unwise to draw any strong inferences as to the relative resistance shown in one family as compared with another.

For the purposes of this compilation resistance is taken to be any relationship between plant and nematode in which the nematode fails to produce viable eggs. This condition may arise when the larvae fail to gain entry to the plant root, when they enter but fail to become established or when they enter and begin development but fail to complete it for any reason, except, of course, factors outside the host-parasite system. Entry of larvae into a root may or may not be accompanied by necrosis, galling or other abnormalities in the root. Examples have been given by Gaskin (1959) and Ivanoff

(1954) of root galls apparently caused by nematodes but in which no living nematodes could be found. By contrast Reynolds (1956) states that *Rosa multiflora*, though showing no galls may have numerous females and egg masses of *M. incognita* on the roots.

Records of partial resistance have been included and the nematodes concerned are marked † in Section I. Partial resistance is defined as the condition in which the rate of reproduction of the nematode is extremely low in relation to the degree of soil infestation. This could be due to the same factors as those which cause resistance but operating to a lesser extent so that occasional egg masses are produced. Although partially resistant crops may appear healthy and produce satisfactory yields, at the same time they may be a source of danger to future crops of the same kind since nematodes that succeed in reproducing on them could form the nucleus of a race that might increase to a dangerous level within a few generations (Sauer & Giles, 1957).

When such information is given, the absence or scarcity of egg masses on the roots of a plant, if they are abundant on the roots of susceptible plants at the same time, is taken as the criterion of resistance. Some authors, however, do not give this information but base their conclusions on the presence or absence of root galls. When this is so we have perforce to accept the same standards. In both cases the criteria suffer from the great disadvantage of all negative evidence, that it is, practically speaking, impossible to prove the absence of an organism in any but a very small sample. It is possible therefore, that some plants recorded as resistant may in fact be only partially resistant.

In some cases nematodes of the same species from different localities have been recorded as differing in their ability to attack the same plant. This may be due to variations in host preferences between geographical populations of the nematode and records to which this applies are marked * in Section I. Another possible explanation is that the differences are really in the species of nematode but that this has escaped the notice of the worker making the record. The identification of *Meloidogyne* species is well known to be difficult: this is illustrated by the fact that in some quarters *M. incognita* and *M. incognita* var. *acrita* are placed together as *M. incognita* owing to the difficulty of distinguishing between them. In other cases the possibility of a mixture of species being present cannot be ruled out, since it is usually impossible to identify every nematode present. Nor must the possibility of the occurrence of undescribed species be forgotten.

No records published after May 1959 are included in the lists.

Rothamsted Experimental Station, M.T.F.
Harpenden, Herts. D.J.H.
June, 1959

Symbols used in Sections I and II

M.=*Meloidogyne*

†=Indicates that slight reproduction has been recorded

*=Indicates that only some populations are unable to reproduce on this plant

‡=This plant has also been recorded as a host.

SECTION I
Plants resistant to *Meloidogyne* species

PHANEROGAMAE
(Flowering plants)

ACHILLEA MILLEFOLIUM L.	...	*M. incognita* &/or v. *acrita* Gaskin, 1958
ACHYRANTHES ASPERA L.	...	†*M. arenaria* ... G. C. Martin, 1958
AEGILOPS SQUARROSA ?	...	*M. incognita* &/or v. *acrita* Gaskin, 1958
		M. incognita ..... Gaskin, 1959
AGROPYRON REPENS Beauv.	...	*M. incognita* &/or v. *acrita* Gaskin, 1958
AGROSTIS PALUSTRIS Huds. see A. STOLONIFERA		
AGROSTIS STOLONIFERA L.	...	*M. hapla* . Ichinohe & Yuhara, 1956
ALBIZZIA JULIBRISSIN Durazz.	...	†*M. incognita* ..... Schindler, 1958
		M. incognita v. *acrita* Schindler, 1958
		†*M. javanica* ..... Schindler, 1958
ALLIUM CEPA L.	...	**M. hapla* ..... Colbran, 1958
		**M. incognita* ..... Colbran, 1958
v. Egyptian Winter	...	†*M. hapla* ..... Sasser, 1954
v. Yellow Globe	...	†*M. hapla* ..... Chitwood, 1951
ALLIUM SATIVUM L.	...	*M. hapla* ..... Raski, 1957
AMARANTHUS RETROFLEXUS L.	...	*M. hapla* ..... Sasser, 1954
AMBROSIA ARTEMISIIFOLIA L.	...	*M. arenaria* ..... Sasser, 1954
		M. hapla ..... Sasser, 1954
		M. incognita ..... Sasser, 1954
		M. incognita v. *acrita* . Sasser, 1954
		M. javanica ..... Sasser, 1954
AMBROSIA PSILOSTACHYA DC.	...	*M. incognita* &/or v. *acrita* Gaskin, 1958
AMBROSIA TRIFIDA L.	...	*M. incognita* &/or v. *acrita* Gaskin, 1958
AMPHIACHYRIS DRACUNCULOIDES Nutt.	...	*M. incognita* &/or v. *acrita* Gaskin, 1958
ANDROPOGON FURCATUS Muhl. see A. PROVINCIALIS		
ANDROPOGON PROVINCIALIS Lam.	...	*M. incognita* &/or v. *acrita* Gaskin, 1958
ANDROPOGON SORGHUM Brot. v. SUDANENSIS Hitchic.	...	*M. incognita* ..... Colbran, 1958
v. SUDANENSIS Hitchic. v. Tift		*M. incognita* v. *acrita* Crittenden, 1956b
ARACHIS HYPOGAEA L.	...	*M. arenaria* ..... Colbran, 1958
		†*M. hapla* ..... Colbran, 1958
		M. incognita ..... Chitwood, 1949
		M. incognita v. *acrita* Chitwood, 1949

ARACHIS HYPOGAEA L. [cont.] ...	?*M. incognita* v. *acrita*	Peacock, 1957
vs. Natal Common & Virginia bunch	*M. arenaria* ssp. *thamesi*	v.d. Linde, 1956
	M. incognita v. *acrita*	v.d. Linde, 1956
	M. javanica	v.d. Linde, 1956
v. Red Spanish	*M. hapla*	Colbran, 1958
v. Spanish	*M. incognita*	Sasser, 1954
	M. incognita v. *acrita*	Sasser, 1954
	M. javanica	Sasser, 1954
ARRHENATHERUM ELATIUS (L.) J. & C. Presl.	*M. hapla*	Ichinohe & Yuhara, 1956
ASPARAGUS OFFICINALIS L.	*M. hapla*	Gaskin & Crittenden, 1956
	†*M. incognita* v. *acrita*	Crittenden, 1952
ASTER ERICOIDES L.	*M. incognita* &/or v. *acrita*	Gaskin, 1958
ASTER PILOSUS Willd. see A. ERICOIDES		
AVENA ELATIOR L. see ARRHENATHERUM ELATIUS		
AVENA SATIVA L. v. Arlington ...	†*M. arenaria*	Sasser, 1954
	M. hapla	Sasser, 1954
		Crittenden, 1956a
	†*M. incognita*	Sasser, 1954
	M. incognita v. *acrita*	Sasser, 1954
		Crittenden, 1956a
	†*M. incognita* v. *acrita*	Ferver & Crittenden, 1958
	†*M. javanica*	Sasser, 1954
v. Atlantic	*M. hapla*	Crittenden, 1956a
	M. incognita v. *acrita*	Crittenden, 1956a
	†*M. incognita* v. *acrita*	Ferver & Crittenden, 1958
v. Lee	*M. hapla*	Gaskin & Crittenden, 1956
vs. Coy, De Soto, Frazier, Lemont Cross, Mustang, Victorgrain & Victoria ...	*M. hapla*	Crittenden, 1956a
	M. incognita v. *acrita*	Crittenden, 1956a
BABIANA HYPOGAEA Burch. ...	*M. javanica* ...	G. C. Martin, 1958
BETA VULGARIS L. ssp. VULGARIS Beetroot	†**M. hapla*	Colbran, 1958
	**M. incognita*	Colbran, 1958
	**M. javanica*	Colbran, 1958
BIDENS BITERNATA (Lour.) Merr. & Sherff.	*M. arenaria* ...	G. C. Martin, 1958
	M. hapla	G. C. Martin, 1958

BIDENS PILOSA L.	*M. javanica* ...	G. C. Martin, 1958
BRASSICA OLERACEA L. v. BOTRYTIS		
Cauliflower	†*M. hapla*	Colbran, 1958
	†*M. incognita*	Colbran, 1958
BRASSICA OLERACEA L. v. CAPITATA		
Cabbage	†*M. hapla*	Colbran, 1958
	M. incognita	Colbran, 1958
v. Early Jersey Wakefield ...	*M. javanica* ...	G. C. Martin, 1958
BROMUS sp.	*M. hapla*	Gillard & v.d. Brande, 1956
CAJANUS CAJAN (L.) Millsp. ...	*M. arenaria*	Colbran, 1958
	M. incognita	Colbran, 1958
	**M. javanica*	Colbran, 1958
CALAMAGROSTIS LANGSDORFII Auct. see DEYEUXIA LANGSDORFII		
CAPSICUM ANNUUM L.	*M. arenaria* ssp. *thamesi*	v.d. Linde, 1956
	†*M. hapla*	Colbran, 1958
	M. javanica	v.d. Linde, 1956
CAPSICUM FRUTESCENS L.	†*M. hapla*	Colbran, 1958
v. Burlington	†*M. arenaria*	Hare, 1957
	M. javanica	Hare, 1957
v. California Wonder ...	*M. arenaria* ssp. *thamesi*	v.d. Linde, 1956
	M. javanica	Sasser, 1954
v. California Wonder Special	†*M. arenaria*	Hare, 1957
	M. javanica	Hare, 1957
v. Oakview Wonder	†*M. arenaria* ...	Hare, 1953 & 1956b
	M. javanica ...	Hare, 1953 & 1956b
v. Red Chili	*M. arenaria* ...	Hare, 1953 & 1956b
	*†*M. incognita* v. *acrita*	Hare, 1956b
	M. javanica ...	Hare, 1953 & 1956b
v. Ruby King	†*M. arenaria*	Hare, 1957
	M. javanica	Hare, 1957
v. Santanka × S	*M. arenaria*	Hare, 1953, 1956b & 1957
	M. incognita	Hare, 1953 & 1956b
	†*M. incognita*	Hare, 1957
	M. incognita v. *acrita*	Hare, 1953, 1956b & 1957
	M. javanica	Hare, 1953, 1956b & 1957
v. (Santanka × S) × California Wonder Special	*M. arenaria*	Hare, 1957
	†*M. incognita*	Hare, 1957
	†*M. incognita* v. *acrita*...	Hare, 1957
	M. javanica	Hare, 1957
v. (Santanka × S) × Ruby King	*M. arenaria*	Hare, 1957
	M. incognita	Hare, 1957
	†*M. incognita* v. *acrita*	Hare, 1957
	M. javanica	Hare, 1957
v. Truheart	*M. arenaria*	Hare, 1957

v. Truheart [cont.]	*M. javanica*	Hare, 1957
v. Worldbeater	*M. javanica*	Sasser, 1954
vs. M41 & M81A	†*M. arenaria*	Hare, 1953
	M. javanica	Hare, 1953
v. M152B	*M. arenaria*	Hare, 1953
	M. incognita	Hare, 1953
	M. incognita v. *acrita*	Hare, 1953
	M. javanica	Hare, 1953
v. P.I. 135824	†*M. arenaria*	Hare, 1956b
	M. javanica	Hare, 1956b
v. P.I. 135873	†*M. incognita* v. *acrita*	Hare, 1956a
v. 405B Mexico	*M. arenaria*	Hare, 1956a & 1956b
	M. incognita	Hare, 1956a & 1956b
	†*M. incognita* v. *acrita*	Hare, 1956a & 1956b
	M. javanica	Hare, 1956a & 1956b
vs. 405B Mexico — 4H, 405B Mexico × Burlington, 405B Mexico × Truheart ...	*M. arenaria*	Hare, 1957
	M. incognita	Hare, 1957
	M. incognita v. *acrita*	Hare, 1957
	M. javanica	Hare, 1957
vs. 526 'Merceh 21', 4575 P4, 4646 Bird's Eye	†*M. incognita* v. *acrita*	Hare, 1956a
v. 4795B Peru	†*M. arenaria*	Hare, 1956b
	M. javanica	Hare, 1956b
CASTANOSPERMUM AUSTRALE Cum.	*M. incognita* v. *acrita*	G. C. Martin, 1958
CENCHRUS PAUCIFLORUS Benth. see C. TRIBULOIDES		
CENCHRUS TRIBULOIDES L.	*M. incognita* &/or v. *acrita*	Gaskin, 1958
	M. incognita v. *acrita*	Gaskin, 1959
CHLORIS GAYANA Kunth.	*M. hapla*	Colbran, 1958
	M. incognita	Colbran, 1958
v. Giant	*M. incognita* v. *acrita*	G. C. Martin, 1958
CHRYSANTHEMUM MORIFOLIUM Ram. v. Shasta	*M. incognita*	Williamson *et al.*, 1955
CICHORIUM ENDIVIA L.	*M. incognita*	Colbran, 1958
CITRULLUS VULGARIS Schrad. ...	*M. arenaria*	Colbran, 1958
	†*M. hapla*	Colbran, 1958
	†*M. incognita*	Colbran, 1958
v. Charlestown Gray	†*M. hapla*	Gaskin & Crittenden, 1956
v. Congo	†*M. hapla*	Sasser, 1954
		Gaskin & Crittenden, 1956
v. Dixie Queen	*M. hapla*	Sasser, 1954
		Gaskin & Crittenden, 1956
v. Early Kansas	†*M. hapla*	Gaskin & Crittenden, 1956

v. Fairfax	*M. hapla*	Gaskin & Crittenden, 1956
v. Florida Giant	*M. hapla*	Gaskin & Crittenden, 1956
v. Hawkesbury	†*M. hapla*	Sasser, 1954
v. Honey Cream	†*M. hapla*	Gaskin & Crittenden, 1956
v. Hoosier Black	*M. hapla*	Gaskin & Crittenden, 1956
v. Klondike	*M. hapla*	Raski, 1957
v. Northland hybrid	*M. hapla*	Gaskin & Crittenden, 1956
v. Rhode Island Red ...	*M. hapla*	Gaskin & Crittenden, 1956
v. Striped Klondike	*M. hapla*	Thomason & McKinney, 1959
v. Wilt Resistant Ironsides ...	*M. hapla*	Gaskin & Crittenden, 1956
COFFEA ROBUSTA Linden	*M. hapla*	Gillard & v.d. Brande, 1956
CROTALARIA ANAGYROIDES H. B. & K.	*M. incognita* v. *acrita*	Thrower, 1958
	M. javanica	Thrower, 1958
CROTALARIA INTERMEDIA Kotschy	†*M. javanica*	Daulton, 1955
CROTALARIA JUNCEA L.	**M. incognita* v. *acrita*	v.d. Linde, 1956
CROTALARIA MUCRONATA Desv. ...	*M. arenaria*	Sasser, 1954
	M. hapla	Sasser, 1954
	M. incognita	Sasser, 1954
	M. incognita v. *acrita*	Sasser, 1954
	M. javanica	Sasser, 1954
CROTALARIA NUBICA Benth. ...	*M. incognita* v. *acrita*	v.d. Linde, 1956
	M. javanica	v.d. Linde, 1956
CROTALARIA OCHROLEUCA G. Don	*M. hapla*	G. C. Martin, 1958
CROTALARIA PAULINA Schrank ...	†*M. javanica*	Daulton, 1955
CROTALARIA RETUSA L.	?*M. incognita* v. *acrita*	Peacock, 1957
CROTALARIA SPECTABILIS Roth. ...	*M. arenaria*	Sasser, 1954
	M. arenaria ssp. *thamesi*	v.d. Linde, 1956
	M. hapla	Sasser, 1954
	M. incognita	Sasser, 1954
	M. incognita v. *acrita*	Sasser, 1954
	M. javanica	Sasser, 1954
		Daulton, 1955
CROTALARIA STRIATA DC.	?*M. incognita* v. *acrita*	Peacock, 1957
CUCUMIS ANGURIA L. (Gherkin) ...	†*M. arenaria*	Sasser, 1954
	M. javanica	Sasser, 1954
v. Small gherkin	†*M. javanica*	Winstead & Sasser, 1956

v. West India gherkin ... †*M. hapla* Winstead & Sasser, 1956
†*M. javanica* Winstead & Sasser, 1956

CUCUMIS MELO L. v. CANTALUPENSIS
vs. Hales' best, Rio Sweet Weslaco & Rocky Ford ... †*M. hapla* Thomason & McKinney, 1959

Winter melon vs. Casaba, Honey Ball Pink Flesh, Honey Dew Golden Rind, Pershaw ... †*M. hapla* Thomason & McKinney, 1959

CUCUMIS SATIVUS L. (Cucumber) *M. hapla* ..... Colbran, 1958
v. Cambridge F_1 hybrid ... *M. hapla* Winstead & Sasser, 1956
vs. Cubit & Marketer ... †*M. hapla* ..... Sasser, 1954
Winstead & Sasser, 1956

lines NC. 1955–114 & NC. 1955–146 ... ... *M. hapla* Winstead & Sasser, 1956
vs. or lines A & C, Ashley, Black Diamond, Boston Pickling, Colorado, Davis Blend, Early Cluster, Early Fortune, Early Russian, Japanese climbing, Lemon, Longfellow, Long Stays Green, Maine No. 2, Model, National Association Pickling, National Pickling, Palmetto, Puerto Rico 39, Smoothie, Stays Green, Stono, Wisconsin SMR 12, SMR 12–9 & SMR 12–12, Wisconsin SR 10, York State, NC. 1955 Nos. 115 & 139, P.I. Nos. 175111, 175120&179676, SC. 849A–2 ... ... †*M. hapla* Winstead & Sasser, 1956

CUCURBITA MOSCHATA Duch. (Squash)
v. Butternut ... ... †*M. hapla* ..... Sasser, 1954
Thomason & McKinney, 1959

CUCURBITA PEPO L. (Pumkin)
v. Connecticut Field ... ... *M. hapla* Thomason & McKinney, 1959

CUCURBITA PEPO L. (Squash)
v. Black Zucchini ... ... †*M. hapla* ..... Sasser, 1954
Thomason & McKinney, 1959

vs. Caserta & Early Prolific Straightneck ... ... †*M. hapla* ..... Sasser, 1954
v. Scallop ... ... †*M. hapla* Thomason & McKinney, 1959

CYPERUS ESCULENTUS L. ... ... *M. incognita* &/or v. *acrita* Gaskin, 1958

DACTYLIS GLOMERATA L. ... ... *M. hapla* Ichinohe & Yuhara, 1956

DATURA STRAMONIUM L.	*M. hapla*	Colbran, 1958
	M. incognita &/or v. *acrita*	Gaskin, 1958
DEYEUXIA LANGSDORFII Kunth ...	*M. hapla*	Ichinohe & Yuhara, 1956
DIANTHUS CARYOPHYLLUS L. ...	*M. arenaria* ...	G. C. Martin, 1958
v. Riviera Giant Mixed ...	†*M. hapla*	Sasser, 1954
ERAGROSTIS CURVULA (Schrad.) Nees.	*M. javanica* ...	G. C. Martin, 1956
Ermelo strain	*M. arenaria* ssp. *thamesi*	v.d. Linde, 1956
	M. hapla	v.d. Linde, 1956
	M. incognita v. *acrita*	v.d. Linde, 1956
	M. javanica	v.d. Linde, 1956
Grootfontein strain	*M. incognita* v. *acrita*	v.d. Linde, 1956
	M. javanica	v.d. Linde, 1956
ERAGROSTIS LEHMANNIANA Nees.	*M. incognita* v. *acrita*	v.d. Linde, 1956
	M. javanica	v.d. Linde, 1956
ERAGROSTIS PECTINACEA Nees. ...	*M. incognita* &/or v. *acrita*	Gaskin, 1958
EUCALYPTUS sp.	†*M. incognita*	Moreno & Turica, 1956
EUPHORBIA CYPARISSIAS L. ...	*M. incognita* &/or v. *acrita*	Gaskin, 1958
FRAGARIA × ANANASSA Duch. vs. Blakemore, Catskill, Premier & Temple	*M. arenaria*	Sasser, 1954
	M. incognita	Sasser, 1954
	M. incognita v. *acrita*	Sasser, 1954
	M. javanica	Sasser, 1954
FRAGARIA VESCA L.	*M. arenaria* ssp. *thamesi*	v.d. Linde, 1956
	M. incognita v. *acrita*	v.d. Linde, 1956
	M. javanica	v.d. Linde, 1956
GLADIOLUS HYBRIDUS Hort. v. Benares	*M. hapla*	Wells & Winstead, 1956
	M. javanica	Wells & Winstead, 1956
v. Bridal Orchid	*M. arenaria*	Wells & Winstead, 1956
	M. hapla	Wells & Winstead, 1956
	M. incognita	Wells & Winstead, 1956
	M. javanica	Wells & Winstead, 1959
v. Elizabeth the Queen ...	*M. arenaria*	Wells & Winstead, 1956
	M. hapla	Wells & Winstead, 1956

v. Elizabeth the Queen [cont.]...	*M. incognita*	Wells & Winstead, 1956
	M. incognita v. *acrita*	Wells & Winstead, 1956
	M. javanica	Wells & Winstead, 1956
vs. Golden Arrow & Hopmans' Glory	*M. arenaria*	Wells & Winstead, 1956
	M. hapla	Wells & Winstead, 1956
	M. javanica	Wells & Winstead, 1956
v. Ivans	*M. arenaria*	Wells & Winstead, 1956
	M. hapla	Wells & Winstead, 1956
	M. incognita v. *acrita*	Wells & Winstead, 1956
v. June Belle	*M. hapla*	Wells & Winstead, 1956
	M. incognita v. *acrita*	Wells & Winstead, 1956
	M. javanica	Wells & Winstead, 1956
v. Konynenburg	*M. arenaria*	Wells & Winstead, 1956
	M. hapla	Wells & Winstead, 1956
	M. incognita	Wells & Winstead, 1956
v. Modern Times	*M. hapla*	Wells & Winstead, 1956
	M. incognita v. *acrita*	Wells & Winstead, 1956
	M. javanica	Wells & Winstead, 1956
v. Morning Kiss	*M. hapla*	Wells & Winstead, 1956
	M. incognita	Wells & Winstead, 1956
v. New Europe	*M. hapla*	Wells & Winstead, 1956
	M. incognita	Wells & Winstead, 1956
	M. incognita v. *acrita*	Wells & Winstead, 1956
vs. October Sunshine & Picardy	*M. arenaria*	Wells & Winstead, 1956
	M. hapla	Wells & Winstead, 1956
	M. incognita v. *acrita*	Wells & Winstead, 1956
	M. javanica	Wells & Winstead, 1956
v. Sans Souci	*M. arenaria*	Wells & Winstead, 1956
	M. hapla	Wells & Winstead, 1956

v. Sans Souci [cont.]	*M. javanica*	Wells & Winstead, 1956
vs. Snow Princess, Spic & Span	*M. hapla*	Wells & Winstead, 1956
v. Spotlight	*M. arenaria*	Wells & Winstead, 1956
	M. hapla	Wells & Winstead, 1956
	M. javanica	Wells & Winstead, 1956
v. Tivoli	*M. hapla*	Wells & Winstead, 1956
v. Valeria	*M. hapla*	Wells & Winstead, 1956
	M. incognita v. *acrita*	Wells & Winstead, 1956
	M. javanica	Wells & Winstead, 1956
v. Van Meegerin	*M. arenaria*	Wells & Winstead, 1956
	M. hapla	Wells & Winstead, 1956
GLYCINE HISPIDA Max. (Soybean)	*M. incognita*	Colbran, 1958
v. Abura	*M. incognita*	Lordello, 1955
v. Anderson	†*M. incognita* v. *acrita*	Crittenden, 1954 & 1955
v. Blackhawk	†*M. incognita* v. *acrita*	Crittenden, 1954 & 1955
vs. Habaro & Haberlandt ...	†*M. incognita* v. *acrita*	Crittenden, 1955
v. Laredo	†*M. incognita* v. *acrita*	Crittenden, 1954 & 1955
vs. Mandarin & Mendota ...	†*M. incognita* v. *acrita*	Crittenden, 1955
v. Monroe	†*M. incognita* v. *acrita*	Crittenden, 1954 & 1955
v. Mukden	†*M. incognita* v. *acrita*	Crittenden, 1955
vs. Ototan & Palmeto ...	?*M. incognita*	Gomes da Silva *et al.*, 1952
v. Peking	†*M. incognita* v. *acrita*	Crittenden, 1955
v. La 41–1219	*M. arenaria*	Cavalho, 1954
	?*M. incognita*	Gomes da Silva *et al.*, 1952
	M. inornata	Lordello, 1956a
	M. javanica ssp. *bauruensis*	Lordello, 1956b
v. N.45–3799	?*M. incognita*	Gomes da Silva *et al.*, 1952
GOSSYPIUM BARBADENSE L. ...	*M. hapla*	Colbran, 1958
	M. incognita	Colbran, 1958
	M. javanica	Colbran, 1958
v. DARWINII	*M. incognita* v. *acrita*	Wiles, 1957

GOSSYPIUM HIRSUTUM L.		
vs. Alabama hybrid 81–14 & Auburn 56	*M. arenaria*	Wiles, 1957
	M. hapla	Wiles, 1957
	†*M. incognita*	Wiles, 1957
	M. javanica	Wiles, 1957
v. Clevewilt No. 3	*†*M. incognita* v. *acrita*	W. J. Martin, 1954
v. Coker 100	*M. arenaria*	Sasser, 1954
		Wiles, 1957
	M. hapla	Sasser, 1954
		Wiles, 1957
	M. incognita	Sasser, 1954
	†*M. incognita*	Wiles, 1957
	M. javanica	Sasser, 1954
		Wiles, 1957
v. Deltapine 15	†*M. hapla*	W. J. Martin, 1953
	*†*M. incognita*	W. J. Martin, 1953 & 1954
	*†*M. incognita* v. *acrita*	W. J. Martin, 1953 & 1954
v. Empire	*M. arenaria*	Wiles, 1957
	M. hapla	Wiles, 1957
	†*M. incognita*	Wiles, 1957
	M. javanica	Wiles, 1957
'many varieties'...	†*M. arenaria* ssp. *thamesi*	v.d. Linde, 1956
	†*M. incognita* v. *acrita*	v.d. Linde, 1956
	†*M. javanica*	v.d. Linde, 1956
HESPERIS MATRONALIS L.	*M. arenaria*	Golden & Shafer, 1958
	M. arenaria v. *thamesi*	Golden & Shafer, 1958
	M. hapla	Golden & Shafer, 1958
	M. incognita	Golden & Shafer, 1958
	M. incognita v. *acrita*	Golden & Shafer, 1958
	M. javanica	Golden & Shafer, 1958
HIBISCUS CANNABINUS L.		
v. P.I. 189208c	*M. hapla*	Sasser, 1954
HIBISCUS EETVELDIANUS Wildem. & Th. Dur.	*M. incognita*	Pate *et al.*, 1958
	M. incognita v. *acrita*	Pate *et al.*, 1958
HIBISCUS ESCULENTUS L. (Okra)		
v. Clemson Spineless ...	†*M. arenaria*	Sasser, 1954
	M. hapla	Sasser, 1954
v. Emerald	*M. hapla*	Gaskin & Crittenden, 1956
v. Spring dwarf	*M. hapla*	Sasser, 1954

HORDEUM JUBATUM L.	*M. incognita* &/or v. *acrita*	Gaskin, 1958
HORDEUM SATIVUM see H. VULGARE		
HORDEUM VULGARE L.	*M. hapla*	Raski, 1957
	†*M. incognita*	Colbran, 1958
	M. javanica	Sauer & Giles, 1957
v. hexastich	*M. hapla*	Ichinohe & Yuhara, 1956
v. Moore	*M. hapla*	Sasser, 1954
v. Wong	*M. hapla*	Gaskin & Crittenden, 1956
'all varieties tested'	*M. hapla*	Crittenden, 1956
IPOMOEA BATATAS Lam.		
vs. Big Stem Jersey, Heartogold & some Jersey varieties ...	*M. incognita*	Cordner *et al.*, 1954
v. Maryland Golden ...	*M. arenaria*	Sasser, 1954
	M. javanica	Sasser, 1954
v. Nemagold (Oklahoma 46)	*M. incognita*	Dean & Struble, 1953
		Cordner *et al.*, 1954
	M. incognita v. *acrita*	Cordner *et al.*, 1958
v. Oklahoma 29	*M. incognita*	Dean & Struble, 1953
v. Orlis	*M. incognita*	Dean & Struble, 1953
		Cordner *et al.*, 1954
vs. Rols, Yellow Jersey & breeding lines B 5941, B 5999 (USDA) & E 7 (South Carolina)	*M. incognita*	Cordner *et al.*, 1954
LESPEDEZA SERICEA Benth. ...	†*M. arenaria*	Allison, 1956
	†*M. incognita*	Allison, 1956
	†*M. incognita* v. *acrita*	Allison, 1956
	†*M. javanica*	Allison, 1956
LESPEDEZA STIPULACEA Maxim v. Rowan	†*M. incognita* ...	Wells *et al.*, 1953
		Hanson *et al.*, 1954
	†*M. incognita* v. *acrita*	Wells *et al.*, 1953
		Hanson *et al.*, 1954
LEUCAENA GLAUCA Benth.	*M. incognita* v. *acrita*	Thrower, 1958
	M. javanica	Thrower, 1958
LINUM USITATISSIMUM L.	†*M. incognita*	Colbran, 1958
	M. javanica	Colbran, 1958
LYCOPERSICON ESCULENTUM Mill.		
v. Illinois T 19	†*M. hapla*	Houssny & Oteifa, 1956
	M. incognita	Houssny & Oteifa, 1956
	M. incognita v. *acrita*	Houssny & Oteifa, 1956
	†*M. javanica*	Houssny & Oteifa, 1956

v. Pearl Harbor	*M. hapla*	Houssny & Oteifa, 1956
	M. incognita	Houssny & Oteifa, 1956
	M. incognita v. *acrita*	Houssny & Oteifa, 1956
	†*M. javanica*	Houssny & Oteifa, 1956
v. Urbana	†*M. hapla*	Houssny & Oteifa, 1956
	M. incognita	Houssny & Oteifa, 1956
	M. incognita v. *acrita*	Houssny & Oteifa, 1956
	†*M. javanica*	Houssny & Oteifa, 1956
LYCOPERSICON PERUVIANUM (L.) Mill.	†*M. hapla*	Colbran, 1958
	M. incognita	Taylor & Chitwood, 1951
		Dean & Struble, 1953
		Sasser, 1954
	M. javanica	Giles & Hutton, 1958
		Colbran, 1958
LYCOPERSICON sp. Breeding lines and varieties derived from crosses between L. ESCULENTUM & L. PERUVIANUM		
Hawaii 5229	*M. arenaria*	Barham & Sasser, 1956
		Barham & Winstead, 1957
		Winstead & Barham, 1957
	M. incognita	Barham & Sasser, 1956
		Barham & Winstead, 1957
		Winstead & Barham, 1957
		Riggs & Winstead, 1958
	M. incognita v. *acrita*	Barham & Sasser, 1956
		Barham & Winstead, 1957
		Winstead & Barham, 1957
	M. javanica	Barham & Sasser, 1956
		Barham & Winstead, 1957
		Winstead & Barham, 1957
H.E.S. 3963	*M. javanica*	Giles & Hutton, 1958
H.E.S. 4242	†*M. javanica*	Giles & Hutton, 1958
H.E.S. 4857	*M. incognita* v. *acrita*	Thomason & Smith, 1957
NC 802	*M. arenaria*	Barham & Winstead, 1957
	M. incognita	Barham & Winstead, 1957
	M. incognita v. *acrita*	Barham & Winstead, 1957

NC 802 [cont.]...	*M. javanica*	Barham & Winstead, 1957
STEP 234	*M. arenaria*	Barham & Sasser, 1956
	M. incognita	Barham & Sasser, 1956
	M. incognita v. *acrita*	Barham & Sasser, 1956
	M. javanica	Barham & Sasser, 1956
Texas lines V14, 275, 276 ...	*M. arenaria*	Barham & Winstead, 1957
	M. incognita	Barham & Winstead, 1957
	M. incognita v. *acrita*	Barham & Winstead, 1957
	M. javanica	Barham & Winstead, 1957
54 N6 (from a backcross of H.E.S. 4857 × commercial tomato)	*M. incognita* v. *acrita*	Thomason & Smith, 1957
	M. javanica	Thomason & Smith, 1957
52029 × C & 52065 × A ...	*M. arenaria* ssp. *thamesi*	v.d. Linde, 1956
	M. incognita v. *acrita*	v.d. Linde, 1956
	M. javanica	v.d. Linde, 1956
52152 × A	*M. arenaria* ssp. *thamesi*	v.d. Linde, 1956
	M. javanica	v.d. Linde, 1956
MARISCUS HEMISPHARICUS (Bolck.) C.B.Cl.	*M. javanica* ...	G. C. Martin, 1958
MEDICAGO SATIVA L. vs. African & African (Bryans' selection) ...	†*M. incognita* v. *acrita*	Reynolds, 1955
	†*M. javanica*	Reynolds, 1955
v. Buffalo	*M. javanica* ...	G. C. Martin, 1958
vs. Chilean (Common), Chilean 21–5 & Chilean 21–5–5 ...	†*M. incognita* v. *acrita*	Reynolds, 1955
vs. Hilmar & Vernal (some selections)	†*M. hapla* ...	Stanford *et al.*, 1958
MOLLUGO VERTICILLATA L. ...	*M. incognita* &/or v. *acrita*	Gaskin, 1958
NEPETA CATARIA L.	*M. incognita* &/or v. *acrita*	Gaskin, 1958
NERIUM OLEANDER L.	*M. hapla*	Sasser, 1954
	†*M. incognita* v. *acrita*	Sasser, 1954
NICOTIANA ALATA Link & Otto ...	†*M. incognita*	Clayton *et al.*, 1958
NICOTIANA ARENTSII Goodspeed ...	†*M. incognita*	Clayton *et al.*, 1958
	†*M. incognita* v. *acrita*	Heggestad & Grosso, 1956

NICOTIANA EXIGUA Wheeler ...	†*M. arenaria*	Chapman, 1957
	†*M. javanica*	Chapman, 1957
NICOTIANA GLAUCA Grah.	†*M. arenaria*	Chapman, 1957
	†*M. incognita*	Chapman, 1957
		Clayton *et al.*, 1958
NICOTIANA GLUTINOSA L.	*M. arenaria*	Graham, 1952
	M. incognita	Graham, 1952
NICOTIANA GLUTINOSA × N. TABACUM	*M. arenaria*	Graham, 1952
NICOTIANA KNIGHTIANA Goodspeed	*M. incognita* v. *acrita*	Heggestad & Grosso, 1956
NICOTIANA LONGIFLORA Cav. ...	*M. arenaria*	Graham, 1952
		Chapman, 1957
	†*M. incognita*	Clayton *et al.*, 1958
	M. incognita v. *acrita*	Graham, 1952
NICOTIANA MEGALOSIPHON Heurck & Muell.	*M. arenaria*	Graham, 1952
		Chapman, 1957
	M. hapla	Graham, 1952
	M. incognita	Graham, 1952
		Chapman, 1957
		Clayton *et al.*, 1958
	M. incognita v. *acrita*	Graham, 1952
	M. javanica	Graham, 1952
NICOTIANA NOCTIFLORA Hook. ...	†*M. incognita*	Clayton *et al.*, 1958
NICOTIANA NUDICAULIS S. Wats. ...	†*M. hapla*	Chapman, 1957
	M. incognita	Chapman, 1957
	†*M. incognita*	Clayton *et al.*, 1958
NICOTIANA OTOPHORA Griseb. ...	*M. incognita*	Chapman, 1957
	†*M. incognita* v. *acrita*	Heggestad & Grosso, 1956
	†*M. javanica*	Chapman, 1957
NICOTIANA PANICULATA L. ...	†*M. incognita* v. *acrita*	Heggestad & Grosso, 1956
NICOTIANA PLUMBAGINIFOLIA Viv.	*M. arenaria*	Graham, 1952
	†*M. incognita*	Clayton *et al.*, 1958
NICOTIANA REPANDA Willd. ...	†*M. arenaria*	Chapman, 1957
	†*M. incognita*	Clayton *et al.*, 1958
	M. incognita v. *acrita*	Heggestad & Grosso, 1956
	†*M. javanica*	Chapman, 1957
NICOTIANA SILVESTRIS Speg. & Comes	*M. incognita* v. *acrita*	Graham, 1952
NICOTIANA sp. Tobacco Introduction 706 × Flue cured tobacco hybridised with N. SILVESTRIS × N. TOMENTOSIFORMIS ...	*M. incognita*	Drolsom *et al.*, 1957
	†*M. incognita*	Clayton *et al.*, 1958
	M. incognita v. *acrita*	Drolsom *et al.*, 1957
8 selected breeding lines ...	*M. incognita*	Drolsom & Moore, 1958

8 Selected breeding lines [cont.] *M. incognita* v. *acrita* Drolsom & Moore, 1958

OENOTHERA BIENNIS L. ... ... *M. incognita* &/or v. *acrita* Gaskin, 1958
ORYZA SATIVA L. ... ... *M. hapla* ..... v.d. Linde, 1956

PANICUM AUTUMNALE Bose ... *M. incognita* &/or v. *acrita* Gaskin, 1958
PANICUM COLORATUM L.
v. Makarikariensis ... ... *M. javanica* ... G. C. Martin, 1956
PANICUM DICHOTOMIFLORUM Michx. see P. AUTUMNALE
PANICUM MAXIMUM Jacq. ... ... *M. arenaria* ssp. *thamesi* v.d. Linde, 1956
M. hapla ..... v.d. Linde, 1956
M. incognita v. *acrita* v.d. Linde, 1956
M. javanica ..... v.d. Linde, 1956
PELARGONIUM sp. (Geranium)
vs. John Doyle & Rosana ... *M. arenaria* ..... Sasser, 1954
†*M. hapla* ..... Sasser, 1954
M. incognita ..... Sasser, 1954
M. incognita v. *acrita* Sasser, 1954
M. javanica ..... Sasser, 1954
PENNESETUM GLAUCUM L. see SETARIA GLAUCA
PHASEOLUS ATROPURPUREUS DC. ... *M. incognita* Hutton & Beall, 1957
PHASEOLUS BRACTEATUS Nees & Mart. *M. incognita* Hutton & Beall, 1957
PHASEOLUS LUNATUS L.
vs. Hopi 5989, Oklahoma N12–5, Oklahoma N13–3 & Westan Strain L76 ... ... †*M. incognita* v. *acrita* Allard, 1954
Strains L136, L138 & L141 ... *M. incognita* v. *acrita* McGuire & Allard, 1958
PHASEOLUS VULGARIS L. ... ... †*M. incognita* ..... Colbran, 1958
PHLEUM PRATENSE L. ... ... *M. hapla* Ichinohe & Yuhara, 1956
PINUS CARIBAEA Morelet ... ... †*M. incognita* Moreno & Turica, 1956
POA ANNUA L. ... ... *M. hapla* Gillard & v.d. Brande, 1956
POA PRATENSIS L. ... ... *M. hapla* Ichinohe & Yuhara, 1956
POLYGONUM AVICULARE L. ... *M. hapla* Gillard & v.d. Brande, 1956
POLYGONUM PERSICARIA L. ... *M. hapla* Gillard & v.d. Brande, 1956
PONCIRUS TRIFOLIATA (L.) Raff. ... *M. incognita* ..... Colbran, 1958
POPULUS hybrids ... ... †*M. incognita* Moreno & Turica, 1956
POTENTILLA RECTA L. ... ... *M. incognita* &/or v. *acrita* Gaskin, 1958

PRUNUS PERSICA (L.) Batsch
v. Davidson ... ... †*M. javanica* ... Havis *et al.*, 1950
Chitwood *et al.*, 1952
v. Okinawa ... ... *M. incognita* ..... Sharpe, 1957

v. Okinawa [cont.]	*M. incognita* v. *acrita*	Sharpe, 1957
	†*M. javanica*	Sharpe, 1957
v. Red Shadow	*M. javanica* ...	Havis *et al.*, 1950
		Chitwood *et al.*, 1952
v. Shalil	*M. incognita*	Chitwood, 1949
	M. incognita v. *acrita*	Hansen *et al.*, 1956
v. S 37	†*M. incognita* ...	Havis *et al.*, 1950
		Chitwood *et al.*, 1951
		Chitwood *et al.*, 1952
	M. incognita v. *acrita*	Hansen *et al.*, 1956
	M. javanica ...	Havis *et al.*, 1950
		Chitwood *et al.*, 1951
	†*M. javanica*	Chitwood *et al.*, 1952
v. Yunnan	*M. incognita*	Chitwood, 1949
		Havis *et al.*, 1950
		Chitwood *et al.*, 1952
PRUNUS PERSICA Chico No. 16 (P.I. 146135) × P. DAVIDIANA Franch. (C–26712)	*M. incognita*	Chitwood *et al.*, 1952
	†*M. incognita* ...	Havis *et al.*, 1950
	†*M. javanica*	Chitwood *et al.*, 1952
PRUNUS sp. v. Bokhara × White flowering Snowball type peach	*M. incognita* v. *acrita*	Hansen *et al.*, 1956
v. Dwarf hybrid No. 7	†*M. incognita* v. *acrita*	Hansen *et al.*, 1956
Marianna strains 2623 & 2624 Myrobalan strains 29 (Sonona), 29c, 29d & 29g	*M. incognita* v. *acrita*	Hansen *et al.*, 1957
	M. javanica ...	Hansen *et al.*, 1957
PUERARIA PHASEOLOIDES Benth.	*M. incognita* v. *acrita*	Thrower, 1958
	M. javanica	Thrower, 1958
RHODODENDRON sp. (Azalea) v. Glenn Dale Hybrid	*M. arenaria*	Sasser, 1954
	M. hapla	Sasser, 1954
	M. incognita	Sasser, 1954
	M. incognita v. *acrita*	Sasser, 1954
	M. javanica	Sasser, 1954
RICINUS COMMUNIS L.	*M. arenaria* ssp. *thamesi*	v.d. Linde, 1956
	*†*M. incognita* v. *acrita*	v.d. Linde, 1956
ROSA ODORATA Sweet	*M. hapla*	G. C. Martin, 1958
RUBUS sp.	*M. javanica* ...	G. C. Martin, 1958
SALIX hybrids	†*M. incognita*	Moreno & Turica, 1956

SCHIZANTHUS sp.	*M. javanica* ...	G. C. Martin, 1958
SECALE CEREALE L. v. Imperial ...	*M. hapla*	Gaskin & Crittenden, 1956
v. Prolific	*M. hapla*	Sasser, 1954
SENECIO LATIFOLIUS DC.	*M. hapla*	G. C. Martin, 1958
SETARIA CRUS-GALLI L.	*M. hapla*	Gillard & v.d. Brande, 1956
SETARIA GLAUCA (L.) Beauv. ...	*M. arenaria* ssp. *thamesi*	v.d. Linde, 1956
	M. hapla	v.d. Linde, 1956
	†*M. incognita* v. *acrita*	v.d. Linde, 1956
	M. javanica	v.d. Linde, 1956
SETARIA LUTESCENS Hubbard ...	*M. incognita* v. *acrita*	Gaskin, 1959
SOLANUM CAROLINENSE L. ...	*M. incognita* &/or v. *acrita*	Gaskin, 1958
SORGHUM ALMUM L.	**M. incognita* v. *acrita*	v.d. Linde, 1956
SORGHUM HALEPENSE Pers. ...	*M. incognita* &/or v. *acrita*	Gaskin, 1958
SORGHUM VULGARE Pers. (Sudan grass)	*M. hapla*	Gaskin & Crittenden, 1956
SPERGULA ARVENSIS L.	*M. hapla*	Gillard & v.d. Brande, 1956
STIZOLOBIUM DEERINGIANUM Bort. (Velvet bean)		
v. Velvet Golden	*M. hapla*	v.d. Linde, 1956
	*†*M. incognita* v. *acrita*	v.d. Linde, 1956
v. Velvet Somerset	†*M. arenaria* ssp. *thamesi*	v.d. Linde, 1956
	M. hapla	v.d. Linde, 1956
	*†*M. incognita* v. *acrita*	v.d. Linde, 1956
v. Velvet Stingless	*M. arenaria* ssp. *thamesi*	v.d. Linde, 1956
	*†*M. incognita* v. *acrita*	v.d. Linde, 1956
STROPHANTHUS SARMENTOSUS DC.	*M. arenaria*	Sasser, 1954
	M. hapla	Sasser, 1954
	†*M. incognita*	Sasser, 1954
	†*M. incognita* v. *acrita*	Sasser, 1954
	M. javanica	Sasser, 1954
TAGETES MINUTA L. (Mexican marigold)	*M. hapla*	G. C. Martin, 1958
THEOBROMA CACAO L.	*M. javanica*	Thrower, 1958
TRAGOPOGON PORRIFOLIUS L. (Salsify)	*M. hapla*	Colbran, 1958
TRIFOLIUM PRATENSE L. selected lines	†*M. incognita*	Bain, 1959
	†*M. incognita* v. *acrita*	Bain, 1959
TRIFOLIUM REPENS L. selected lines	†*M. incognita*	Bain, 1959
	†*M. incognita* v. *acrita*	Bain, 1959

TRITICUM AESTIVUM L.	†*M. incognita*	Colbran, 1958
v. Coastal	*M. hapla*	Sasser, 1954
vs. Nured, Seneca & Thorne...	*M. hapla*	Gaskin & Crittenden, 1956
'all varieties tested'	*M. hapla*	Crittenden, 1956
TRITICUM VULGARE Vill. see T. AESTIVUM		
TRIUMFETTA sp.	*M. javanica* ...	G. C. Martin, 1958
VERBENA URTICIFOLIA L.	*M. incognita* &/or v. *acrita*	Gaskin, 1958
VIGNA SINENSIS Endl. (Cowpea) ...	†*M. hapla*	Colbran, 1958
v. Iron & breeding lines M255, M455, M755 & M855 ...	*M. arenaria*	Hare, 1959
	†*M. incognita*	Hare, 1959
	†*M. incognita* v. *acrita*	Hare, 1959
	†*M. javanica*	Hare, 1959
v. Machakos	?*M. incognita* v. *acrita*	Peacock, 1957
VITIS CANDICANS Engelm.	*M. incognita* v. *acrita*	Lider, 1954
VITIS CHAMPINI Hort. No. 3639 ...	*M. incognita* v. *acrita*	Lider, 1954
VITIS ROTUNDIFOLIA Michx. ...	*M. incognita* v. *acrita*	Lider, 1954
VITIS SOLONIS (?)	*M. incognita* v. *acrita*	Lider, 1954
VITIS VINIFERA L. Stocks 261/50 & 16–16	*M. incognita*	Vega, 1952
ZEA MAYS L.	*M. hapla*	Colbran, 1958
	**M. incognita*	Colbran, 1958
	*†*M. incognita*	Colbran, 1958
	**M. javanica*	Colbran, 1958
	*†*M. javanica*	Colbran, 1958
vs. Bouquet, Cannearly, Carmel Cross, Cheddar Cross ...	*M. hapla*	Gaskin & Crittenden, 1956
v. Cogent Ill. 8 × 6	*M. hapla*	Sasser, 1954
v. Golden Beauty	*M. hapla*	Gaskin & Crittenden, 1956
v. Golden Cross Bantam ...	*M. hapla*	Sasser, 1954
		Gaskin & Crittenden, 1956
vs. Golden Jewel, Golden Pearl & Hoosier Gold	*M. hapla*	Gaskin & Crittenden, 1956
v. 'Hybrid Corn' ...	†?*M. incognita* v. *acrita*	Peacock, 1957
v. Iochief	*M. hapla*	Gaskin & Crittenden, 1956
v. Kingcrost KR–2	*M. hapla*	Raski, 1957
vs. Marcross & Spancross ...	*M. hapla*	Gaskin & Crittenden, 1956
'some inbred lines'	†*M. incognita*	Nelson, 1957

CRYPTOGAMAE
PTERIDOPHYTA
FILICINEAE
(Ferns)

ADIANTUM CUNEATUM Langsd. & Fisch.	*M. hapla*	Gillard & v.d. Brande, 1956
POLYSTICHUM TRIPTERON (Kunze) Presl.	*M. hapla*	Ichinohe & Yuhara, 1956
PTERIDIUM AQUILINUM (L.) Kuhn v. JAPONICUM	*M. hapla*	Ichinohe & Yuhara, 1956
PTERIS CRETICA L. v. WILSONII Hort.	*M. hapla*	Gillard & v.d. Brande, 1956

EQUISETINEAE
(Horsetails)

EQUISETUM HYEMALE L. v. JAPONICUM	*M. hapla*	Ichinohe & Yuhara, 1956

SECTION II

Resistant plants arranged in families and listed under *Meloidogyne* species.

Plants marked ‡ have been recorded elsewhere as hosts.

Plant varieties are given in Section I only.

Meloidogyne arenaria

AMARANTHACEAE
‡*Achyranthes aspera*
APOCYNACEAE
Strophanthus sarmentosus
CARYOPHYLLACEAE
‡*Dianthus caryophyllus*
COMPOSITAE
Ambrosia artemisiifolia
Bidens biternata
CONVOLVULACEAE
Ipomoea batatas
CRUCIFERAE
Hesperis matronalis
CUCURBITACEAE
‡*Citrullus vulgaris*
‡*Cucumis anguria*
ERICACEAE
Rhododendron sp.
GERANIACEAE
Pelargonium sp.
GRAMINEAE
‡*Avena sativa*
IRIDACEAE
Gladiolus hybridus
LEGUMINOSAE
‡*Arachis hypogaea*
Cajanus cajan
Crotalaria mucronata
Crotalaria spectabilis
‡*Glycine hispida*
‡*Lespedeza sericea*
‡*Vigna sinensis*
MALVACEAE
Gossypium hirsutum
‡*Hibiscus esculentus*
ROSACEAE
Fragaria x *ananassa*
SOLANACEAE
‡*Capsicum frutescens*
Lycopersicon hybrids
Nicotiana exigua
Nicotiana glauca
Nicotiana glutinosa
N. glutinosa x *N. tabacum*
Nicotiana longiflora
Nicotiana megalosiphon
Nicotiana plumbaginifolia
Nicotiana repanda

Meloidogyne arenaria ssp. *thamesi*

CRUCIFERAE
Hesperis matronalis
EUPHORBIACEAE
Ricinus communis
GRAMINEAE
Eragrostis curvula
Panicum maximum
Setaria glauca
LEGUMINOSAE
Arachis hypogaea
Crotalaria spectabilis
‡*Stizolobium deeringianum*
MALVACEAE
‡*Gossypium hirsutum*
ROSACEAE
Fragaria vesca
SOLANACEAE
Capsicum annuum
Lycopersicon hybrids

Meloidogyne hapla

AMARANTHACEAE
Amaranthus retroflexus
APOCYNACEAE
Nerium oleander
Strophanthus sarmentosus
CARYOPHYLLACEAE
‡*Dianthus caryophyllus*
Spergula arvensis
CHENOPODIACEAE
‡*Beta vulgaris*
COMPOSITAE
Ambrosia artemisiifolia
Bidens biternata
Senecio latifolius
Tagetes minuta
‡*Tragopogon porrifolius*
CRUCIFERAE
‡*Brassica oleracea botrytis*
‡*Brassica oleracea capitata*
Hesperis matronalis
CUCURBITACEAE
‡*Citrullus vulgaris*
Cucumis anguria
Cucumis melo cantalupensis
‡*Cucumis sativus*
‡*Cucurbita moschata*
‡*Cucurbita pepo*
ERICACEAE
Rhododendron sp.
GERANIACEAE
Pelargonium sp.
GRAMINEAE
Agrostis stolonifera
Arrhenatherum elatius
‡*Avena sativa*
Bromus sp.
Chloris gayana
Dactylis glomerata
Deyeuxia langsdorfii
Eragrostis curvula
Hordeum vulgare
Oryza sativa
Panicum maximum
Phleum pratense
Poa annua
Poa pratensis
Secale cereale
Setaria crus-galli
Setaria glauca
GRAMINEAE—cont.
Sorghum vulgare
Triticum aestivum
Zea mays
IRIDACEAE
Gladiolus hybridus
LEGUMINOSAE
‡*Arachis hypogaea*
‡*Crotalaria mucronata*
Crotalaria ochroleuca
Crotalaria spectabilis
‡*Medicago sativa*
‡*Stizolobium deeringianum*
‡*Vigna sinensis*
LILIACEAE
Allium cepa
Allium sativum
Asparagus officinalis
MALVACEAE
Gossypium barbadense
‡*Gossypium hirsutum*
Hibiscus cannabinus
Hibiscus esculentus
POLYGONACEAE
Polygonum aviculare
‡*Polygonum persicaria*
ROSACEAE
‡*Fragaria* × *ananassa*
Rosa odorata
RUBIACEAE
Coffea robusta
SOLANACEAE
‡*Capsicum annuum*
‡*Capsicum frutescens*
‡*Datura stramonium*
‡*Lycopersicon esculentum*
‡*Lycopersicon peruvianum*
‡*Nicotiana megalosiphon*
Nicotiana nudicaulis

PTERIDOPHYTA

EQUISETACEAE
Equisetum hyemale v. *japonicum*
POLYPODIACEAE
Adiantum cuneatum
Polystichum hipteron
Pteridium aquilinum v. *japonicum*
Pteris cretica v. *wilsonii*

Meloidogyne incognita

AIZOACEAE
Mollugo verticillata
APOCYNACEAE
‡*Strophanthus sarmentosus*
CHENOPODIACEAE
‡*Beta vulgaris*
CONVOLVULACEAE
‡*Ipomoea batatas*
COMPOSITAE
Achillea millefolium
Ambrosia artemisiifolia
Ambrosia psilostachya
Ambrosia trifida
Amphiachyris dracunculoides
Aster ericoides
Chrysanthemum morifolium
Cichorium endivia
CRUCIFERAE
‡*Brassica oleracea capitata*
Hesperis matronalis
CUCURBITACEAE
‡*Citrullus vulgaris*
CYPERACEAE
Cyperus esculentus
ERICACEAE
Rhododendron sp.
EUPHORBIACEAE
Euphorbia cyparissias
GERANIACEAE
Pelargonium sp.
GRAMINEAE
Aegilops squarrosa
Agropyron repens
Andropogon provincialis
Andropogon sorghum sudanensis
‡*Avena sativa*
Cenchrus tribuloides
Chloris gayana
Eragrostis pectinacea
Hordeum jubatum
‡*Hordeum vulgare*
Panicum autumnale
Sorghum halepense
Triticum aestivum
‡*Zea mays*
IRIDACEAE
Gladiolus sp.
LABIATEAE
Nepeta cataria
LEGUMINOSAE
‡*Albizzia julibrissin*
Arachis hypogaea
‡*Cajanus cajan*
Crotalaria mucronata
Crotalaria spectabilis
‡*Glycine hispida*
‡*Lespedeza sericea*
‡*Lespedeza stipulacea*
Phaseolus atropurpurea
Phaseolus bracteatus
‡*Phaseolus vulgaris*
‡*Trifolium pratense*
‡*Trifolium repens*
‡*Vigna sinensis*
LILIACEAE
‡*Allium cepa*
LINACEAE
‡*Linum usitatissimum*
MALVACEAE
‡*Gossypium barbadense*
‡*Gossypium hirsutum*
Hibiscus eetveldianus
MYRTACEAE
Eucalyptus sp.
ONAGRACEAE
Oenothera biennis
PINACEAE
Pinus caribaea
ROSACEAE
Fragaria × *ananassa*
Potentilla recta
Prunus persica
RUTACEAE
Poncirus trifoliata
SALICACEAE
Populus hybrids
Salix hybrids
SOLANACEAE
‡*Capsicum frutescens*
Datura stramonium
‡*Lycopersicon esculentum*
Lycopersicon peruvianum
Lycopersicon hybrids
Nicotiana alata
Nicotiana arentsii
Nicotiana glauca
‡*Nicotiana glutinosa*
‡*Nicotiana longiflora*

Meloidogyne incognita—cont.

SOLANACAE—cont.
Nicotiana megalosiphon
Nicotiana noctiflora
Nicotiana nudicaulis
Nicotiana otophora
‡*Nicotiana plumbaginifolia*
Nicotiana repanda
Nicotiana hybrids
Solanum carolinense
VERBENACEAE
Verbena urticifolia
VITACEAE
‡*Vitis vinifera*

Meloidogyne incognita var. *acrita*

APOCYNACEAE
‡*Nerium oleander*
‡*Strophanthus sarmentosus*
COMPOSITAE
Ambrosia artemisiifolia
CONVOLVULACEAE
‡*Ipomoea batatas*
CRUCIFERAE
Hesperis matronalis
ERICACEAE
Rhododendron sp.
EUPHORBIACEAE
‡*Ricinus communis*
GERANIACEAE
Pelargonium sp.
GRAMINEAE
Andropogon sorghum sudanensis
‡*Avena sativa*
Cenchrus tribuloides
‡*Chloris gayana*
‡*Eragrostis curvula*
Eragrostis lehmanniana
‡*Panicum maximum*
Setaria glauca
Setaria lutescens
‡*Sorghum almum*
‡*Zea mays*
IRIDACEAE
Gladiolus hybridus
LEGUMINOSAE
Albizzia julibrissin
Arachis hypogaea
Castanospermum australe
Crotalaria anagyroides
‡*Crotalaria juncea*
Crotalaria mucronata
Crotalaria nubica
Crotalaria retusa
Crotalaria spectabilis
Crotalaria striata
LEGUMINOSAE—cont.
‡*Glycine hispida*
‡*Lespedeza sericea*
‡*Lespedeza stipulacea*
Leucaena glauca
‡*Medicago sativa*
‡*Phaseolus lunatus*
Pueraria phaseoloides
‡*Stizolobium deeringianum*
‡*Trifolium pratense*
‡*Trifolium repens*
Vigna sinensis
LILIACEAE
‡*Asparagus officinalis*
MALVACEAE
‡*Gossypium barbadense*
‡*Gossypium hirsutum*
Hibiscus eetveldianus
ROSACEAE
Fragaria × *ananassa*
Fragaria vesca
‡*Prunus persica*
SOLANACEAE
‡*Capsicum frutescens*
‡*Lycopersicon esculentum*
Lycopersicon hybrids
Nicotiana arentsii
Nicotiana knightiana
Nicotiana longiflora
Nicotiana megalosiphon
Nicotiana otophora
Nicotiana paniculata
Nicotiana repanda
Nicotiana sylvestris
Nicotiana hybrids
VITACEAE
Vitis candicans
‡*Vitis champini*
Vitis rotundifolia
‡*Vitis solonis*

Meloidogyne inornata

LEGUMINOSAE
Glycine hispida

Meloidogyne javanica

APOCYNACEAE
Strophanthus sarmentosus
CHENOPODIACEAE
‡*Beta vulgaris*
COMPOSITAE
Ambrosia artemisiifolia
Bidens pilosa
CONVOLVULACEAE
‡*Ipomoea batatas*
CRUCIFERAE
‡*Brassica oleracea capitata*
Hesperis matronalis
CUCURBITACEAE
Cucumis anguria
CYPERACEAE
Mariscus hemispharicus
ERICACEAE
Rhododendron sp.
GERANIACEAE
Pelargonium sp.
GRAMINEAE
Avena sativa
‡*Eragrostis curvula*
Eragrostis lehmanniana
Hordeum vulgare
‡*Panicum coloratum*
Panicum maximum
Setaria glauca
‡*Zea mays*
IRIDACEAE
Babiana hypogaea
Gladiolus hybridus
LEGUMINOSAE
‡*Albizzia julibrissin*
‡*Arachis hypogaea*
Cajanus cajan
Crotalaria anagyroides
LEGUMINOSAE—cont.
‡*Crotalaria intermedia*
Crotalaria mucronata
Crotalaria nubica
Crotalaria paulina
Crotalaria spectabilis
‡*Lespedeza sericea*
‡*Leucaena glauca*
‡*Medicago sativa*
‡*Pueraria phaseoloides*
‡*Vigna sinensis*
LINACEAE
‡*Linum usitatissimum*
MALVACEAE
Gossypium barbadense
‡*Gossypium hirsutum*
ROSACEAE
‡*Fragaria* × *ananassa*
Fragaria vesca
‡*Prunus persica*
Rubus sp.
SOLANACEAE
Capsicum annuum
‡*Capsicum frutescens*
‡*Lycopersicon esculentum*
‡*Lycopersicon peruvianum*
Lycopersicon hybrids
Nicotiana exigua
‡*Nicotiana megalosiphon*
Nicotiana otophora
Nicotiana repanda
Schizanthus sp.
STERCULIACEAE
Theobroma cacao
TILIACEAE
Triumfetta sp.

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